

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An ashing method comprising the steps of:
holding a substrate having a resist mask formed on ~~through~~ an insulating film in a chamber of an ashing apparatus; ~~and~~

applying an RF electric power to activate an oxygen-containing gas introduced in the chamber in order to perform ashing of the resist mask, while an RF electric power is applied to the substrate;

wherein a ratio (W_s/W_b) of the RF electric power (W_s) for activating the oxygen-containing gas to the RF electric power (W_b) applied to the substrate is set so that the change rate of the dielectric constant of the insulating film before and after ashing is 10 % or less.

2. (Original) The ashing method according to claim 1, wherein the RF electric power (W_b) applied to the substrate is controlled to be a predetermined value or higher.

3. (Original) The ashing method according to claim 2, wherein the RF electric power (W_b) is 150 W or higher.

4. (Original) The ashing method according to claim 1, wherein the RF electric power (W_s) for activating the oxygen-containing gas is 1000 W or less.

5. (Original) The ashing method according to claim 1, wherein a ratio (W_s/W_b) of the RF electric power (W_s) for activating the oxygen-containing gas to the RF electric power (W_b) applied to the substrate is controlled to be a predetermined value or lower.

6. (Original) The ashing method according to claim 5, wherein the ratio (W_s/W_b) is 5 or less.

7. (Currently Amended) The ashing method according to ~~claim 4~~ claim 13, wherein ~~the~~ a ratio (W_s/W_b) of the RF electric power (W_s) for activating the oxygen-containing gas to the RF electric power (W_b) applied to the substrate is set so that the change rate of the dielectric constant of the insulating film before and after ashing is 10 % or less.

8. (Original) The ashing method according to claim 1, wherein the substrate is set to a temperature of about 20°C or lower.

9. (Original) The ashing method according to claim 1, wherein the insulating film formed on the substrate is a low dielectric constant film having a dielectric constant of 3.5 or less.

10. (Original) The ashing method according to claim 1, wherein the RF electric power applied for activation of the oxygen-containing gas is supplied by a first power source and the RF electric power applied to the substrate is supplied by a second power source via a lower electrode formed in the chamber.

11. (Original) The ashing method according to claim 10, wherein the lower electrode supports the substrate and is controlled to have a predetermined temperature for maintaining the temperature of the substrate.

12. (Original) The ashing method according to claim 1, wherein the oxygen-containing gas is an oxygen gas, an ozone gas, a mixture thereof, or a mixture of either or both of these gases with a N_2 gas or a CF_4 gas.

13. (New) An ashing method comprising the steps of:

(1) situating a substrate having a resist mask formed on an insulating film in a chamber of an ashing apparatus;

(2) introducing an oxygen-containing gas into the chamber;

(3) applying an RF electric power to activate the oxygen-containing gas;

(4) applying RF electric power to the substrate while performing step (3);

wherein steps (2) - (4) are performed in a manner substantially to avoid bonding that would substantially change a dielectric constant of the insulating film.

14. (New) The ashing method according to claim 13, wherein steps (2) - (4) are performed in a manner substantially to avoid at least one of Si-H bonding and H-OH bonding with the insulating film.

15. (New) The ashing method according to claim 13, wherein steps (2) - (4) result in formation of a protective film on a surface of the insulating film.

16. (New) The ashing method according to claim 13, wherein steps (2) - (4) are performed in a manner so that a rate of change of the dielectric constant of the insulating film is less than about 10% when the RF electric power applied to the substrate in step (4) is at least about 150 W.

17. (New) The ashing method according to claim 13, wherein steps (2) - (4) are performed in a manner so that a rate of change of the dielectric constant of the insulating

film is less than about 8% when the RF electric power applied to the substrate in step (4) is at least about 190 W.

18. (New) The ashing method according to claim 13, wherein steps (2) - (4) are performed in a manner so that a rate of change of the dielectric constant of the insulating film is less than about 5% when the RF electric power applied to the substrate in step (4) is at least about 250 W.

19. (New) An ashing method comprising the steps of:
holding a substrate having a resist mask formed on an insulating film in a chamber of an ashing apparatus;
applying an RF electric power to activate an oxygen-containing gas introduced in the chamber in order to perform ashing of the resist mask, while an RF electric power is applied to the substrate;
wherein the RF electric power (W_s) for activating the oxygen-containing gas is 1000 W or less.

20. (New) The ashing method according to claim 19, wherein a ratio (W_s/W_b) of the RF electric power (W_s) for activating the oxygen-containing gas to the RF electric power (W_b) applied to the substrate is set so that the change rate of the dielectric constant of the insulating film before and after ashing is 10 % or less.